Lumbar Sympathectomy in Older Patients

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• Of 43 older patients (aged 65 to 83 years) with arteriosclerosis obliterans treated by lumbar sympathectomy for one or both limbs, 19 had excellent result, 13 had fair result and four had poor result. One died postoperatively and six later. Results were better than prognosticated from response to sympathetic block. Thirty-four patients considered the operation worth while and twelve, after unilateral sympathectomy, requested operation for the other limb also. Twenty-four after operation could walk farther without claudication.

NO CRITERIA for lumbar sympathectomy in arterial insufficiency due to arteriosclerosis obliterans have been found fully satisfactory. The operation has been accepted as a useful procedure, however,[1, 3, 5] and is generally considered suitable for younger patients. However, there are a great number of patients past 65 years of age, and usually physiologically older, who are in need of help but have been denied this operation on the basis of age alone. To aid in development of criteria for selection of older patients for sympathectomy, a study was made of 43 patients 65 to 83 years of age on whom sympathectomy, bilateral in 17 cases, was performed. The operations were done in a period of five years, and the present study is based on observations made within six months to five and a half years after operation.

SELECTION OF PATIENTS

None of the patients in the group had thromboangiitis obliterans or traumatic arterial insufficiency. All gave a history of progressing arterial insufficiency, which was a positive requisite for operation. As a means of determining beforehand the probabilities of benefit from operation, sympathetic block was carried out in all cases and the response was judged on the basis of pneumoplethysmographic change, rise in temperature of the extremity, increase in tolerance for walking, and subjective response. None of the patients had the so-called paradoxical response to sympathetic block. Spinal anesthesia and peripheral nerve block were used in only a few cases.

POSTOPERATIVE COMPLICATIONS

In 29, or 67 per cent, of the patients operated upon, postsympathectomy neuritis developed, usually on the sixth to the tenth postoperative day. It was always worse at night, was annoying but not unbearable, and lasted from two weeks to eight months. Reassurance as to its nature and administration of acetylsalicylic acid compound are all that is offered at present in such cases; earlier, a patient given codeine became addicted to it. In addition to the foot care prescribed for other patients, daily applications of lanolin ointment are used to keep the skin soft. Surgeons in some large centers say they have not observed postsympathectomy neuritis; it is possible that this complication does not become evident until after the patients have left the centers.

Other complications were atelectasis, mild adynamic ileus, urinary retention, incisional hematoma, and headache, none of these being severe or leading to prolonged illness. They responded to ordinary measures. In no case did gangrene progress after operation.

Thrombophlebitis occurred in two cases, causing only mild edema which nevertheless was something of a problem since elevation and elastic bandaging of the involved extremity were contraindicated, yet circulation was hindered and vulnerability to infection was increased. Anticoagulant therapy and horizontal bedrest proved effective. In one of these patients, minimal and asymptomatic edema developed after he became ambulatory. Elastic bandages were tried but caused pain; they were discontinued, therefore, and after three years there have been no symptoms although minimal edema still recurs at the end of the day. The other patient also had moderate edema with aching pain. These symptoms were relieved with elastic bandages and recurred when the bandages were removed. Therefore the patient continued to wear bandages. The experience with thrombophlebitis in these cases has led to the subcutaneous administration of 50 mg. of heparin every six hours in all cases where anticoagulants are not contraindicated. Since this measure was adopted there has been no thrombophlebitis—nor any hemorrhage—in the last 18 cases.

One patient, aged 74, died in hospital on the fourth postoperative day. Death was sudden and was attributed to coronary artery thrombosis, which was

TABLE 1.—*Results of sympathectomy as compared with preoperative prognosis as determined by response to sympathetic block. Forty-three patients more than 65 years of age.*

Preoperative Prognosis	Temperature Rise in Toe on Sympathetic Block	Total Cases	Results*			
			Good	Fair	Poor	Died†
Good	9–14° F.	12	9	3	0	0
Fair	5– 8° F.	19	8	7	1	3
Poor	0– 4° F.	12	2	3	3	4
		43	19	13	4	7

*Six months to five and a half years after operation.
†Only one of the deaths was in the postoperative period.

observed at autopsy. This patient, who had had thrombosis of the terminal aorta and impending gangrene of the right foot, was operated on before the postoperative use of heparin became routine. Preoperative electrocardiographic findings were within normal limits.

Popoff[6] reported precipitation of gangrene, an unusual complication, not experienced in this series, which he attributed to the opening of the arteriovenous shunts with further diminution of circulation through the nutrient capillaries.

RESULTS

All patients have been examined from time to time, by one or another of three physicians familiar with vascular disease, since the operations (six months to five and a half years at the time of this presentation). According to the clinical records, the resident surgeon considered 40 of the 43 patients improved on discharge; in most instances this opinion was corroborated by the chief of service and by the patient's declaration. At last report, 30 were still free of symptoms of arterial insufficiency, except for intermittent claudication, which had been present in 35 before operation. Twenty-four said that they could walk farther before onset of claudication than they could preoperatively, and in none did claudication occur in a shorter distance than preoperatively. Nine of the 24 who had improvement in this respect could walk at least 400 yards farther than before.

Of 17 patients who had had bilateral sympathectomy, presumably including the first lumbar ganglion, 15 observed no change in sexual activity, although most had not been sexually active for years. One was unable to ejaculate (relaxation of sphincter action probably caused intravesical discharge of the ejaculate). Only one reported increase of libido and of ability to maintain erection.

One 70-year-old patient had early gangrene of the right forefoot; after sympathectomy a transmetatarsal amputation was performed and the stump did not heal. Ten days later an elective amputation at the calf was done and the stump healed readily. The patient is one of the few with amputation for vascular disease who successfully wears a prosthesis.

One patient, a Demerol addict for two years before operation, had no noticeable improvement, either objective or subjective, when discharged two weeks after right lumbar sympathectomy. Symptoms were severe coldness and pain on rest. The patient was cured of addiction, but because of persistent pain the sympathectomized limb was amputated above the condyle.

In the opinion of 34 patients, the operation was well worth while. Two said it was "no good" and that they would not submit to it again, one because of severe postoperative neuritis and one because no improvement was apparent.

Comparison of preoperative prognosis and postoperative results is shown in Table 1. Result was classified as *good* when pain was absent and activity unrestricted; *fair* when pain was absent but activity was restricted yet sufficient to let the patient care for his ordinary needs; *poor* when pain was present and the patient needed help in caring for himself. It should be added that of 19 patients with good result, 13 were able to work after the operation.

Prognosis was based primarily on rise of temperature on sympathetic block; and as Table 1 indicates, results were better than predicted in most cases. In nine patients with high vasomotor tone, as manifested by cool, moist feet, both prognosis and results were good. Good results were also correlated with preoperative arteriographic observation of short segmental obstruction of the superficial femoral or popliteal artery with moderately good collateral circulation.

COMMENT

Admittedly, lack of controls limits the value of this report; yet the author knows of no series of sympathectomies for which there were matching cases, conservatively treated, that could be observed for comparison. Such a series would be valuable. Clinical impressions are of some value when sufficiently contrasting; in the author's experience the many patients treated conservatively in the same period did not have significant improvement in ability to walk without claudication. In a moderate number amputation was required owing to pain or gangrene, and in general symptoms seemed more severe.

Twelve patients with unilateral sympathectomy of the more seriously affected limb were, in a manner, their own controls. These patients, six months to

four years after operation, requested sympathectomy for the other limb since they had had an arrest of progression or relief of symptoms following the first operation. Another point of evidence, in still other cases, was that after operation there was arrest or improvement of arterial insufficiency which had grown progressively worse under conservative management.

It has been advocated that sympathectomy should always be bilateral. However, the high incidence of annoying neuritis and the possibility of complications in older patients seems to make a definite indication desirable. In 60 per cent of the cases here presented, one limb was much less affected; in such patients operation on the alternate side can be done later if warranted.

Since good results sometimes occur even when not prognosticated by preoperative tests (Table 1) and since the operative mortality is only 1.6 per cent, it would seem that most patients with progressive arteriosclerosis obliterans should be offered sympathectomy.

Although there is no evidence that smoking is an etiologic factor in arteriosclerosis obliterans, it should perhaps be noted that every patient in the series had smoked heavily for at least 20 years and in most cases for 35 to 40 years.

In most cases resection included the first, second and third lumbar ganglions; in 12 cases it was extended to the fourth. No difference was noted in these 12.

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